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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/535,329	05/18/2005	Brent L. Carpenter	432081	5708

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EXAMINER	
BHAT, ADITYA S	

ART UNIT	PAPER NUMBER
2863	

DATE MAILED: 09/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/535,329	CARPENTER, BRENT L.	
	Examiner	Art Unit	
	Aditya S. Bhat	2863	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *18 May 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *5/18/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

With regards to claims 12-23 the methods recited in the claimed invention do not produce a real life, real world, useful, concrete, and tangible ***result***.

The claimed invention as a whole must accomplish a practical application. That is, it must produce a "useful, concrete and tangible result." State Street, 149 F.3d at 1373, 47 USPQ2d at 1601-02. The purpose of this requirement is to limit patent protection to inventions that possess a certain level of "real world" value, as opposed to subject matter that represents nothing more than an idea or concept, or is simply a starting point for future investigation or research (Brenner v. Manson, 383 U.S. 519, 528-36, 148 USPQ 689, 693-96); In re Ziegler, 992, F.2d 1197, 1200-03, 26 USPQ2d 1600, 1603-06 (Fed. Cir. 1993)).

A process that consists solely of the manipulation of an abstract idea is not concrete or tangible. See In re Warmerdam, 33 F.3d 1354, 1360, 31 USPQ2d 1754, 1759 (Fed. Cir. 1994). See also Schrader, 22 F.3d at 295, 30 USPQ2d at 1459. Nor can one patent "a novel and useful mathematical formula," Flook, 437 U.S. at 585, 198 USPQ at 195; electromagnetism or steam power, O'Reilly v. Morse, 56 U.S. (15 How.) 62, 113-114 (1853);

Referring to the last limitation in claim 12, the determining step is merely acquiring pressure data. In this case in order for the result to be concrete and tangible

the data must cause some physical change. One example would be storing the pressure data for later retrieval.

Please view the following guidelines to overcome 35 U.S.C. 101 rejection made in this office action.

http://www.uspto.gov/web/offices/com/sol/og/2005/week47/patgupa.htm

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 6-14, 17-19 and 21-23 are rejected under 35 U.S.C. 102(b) as being anticipated by Bose et al. (USPN 5,734,112).

With regards to claim 1, Bose et al. (USPN 5,734,112) teaches a sensor (100), characterized in that the sensor comprises:

a conduit configured for conveying a material, (col. 2 lines 63-64)

a vibrator configured for vibrating the conduit along a first cross-sectional axis and for vibrating the conduit along a second cross-sectional axis; (col. 2 lines 64-67)

a sensor configured for detecting a first frequency along the first cross-sectional axis (a) and for detecting a second frequency along the second cross-sectional axis (b); (Col. 9,lines 18-21) and

a processor (Col. 9, lines 9-10) configured for determining a pressure of the material based on a ratio of the first frequency and the second frequency. (col. 3,lines 10-13)

With regards to claims 2, 13 and 14, Bose et al. (USPN 5,734,112) teaches the conduit comprises a cross-section selected from one of an elliptical shape and an oval shape. (12,14 figure 1)

With regards to claim 3, Bose et al. (USPN 5,734,112) teaches the first frequency is a function of design constants, mass of the material and an elasticity of the conduit. (Col. 4, lines 12-13)

With regards to claims 6 and 17, Bose et al. (USPN 5,734,112) teaches the pressure linearly corresponds to the ratio of the first and the second frequencies. (Col. 3, lines 10-13)

With regards to claims 7 and 18, Bose et al. (USPN 5,734,112) teaches the conduit is elastically deformable to change a length of the second cross-sectional axis based on the pressure of the material. (col. 2 lines 34-36)

With regards to claims 8 and 19, Bose et al. (USPN 5,734,112) teaches the processor comprises a converter configured for receiving control signals from the sensor and for digitally converting the control signals to represent the first frequency and the second frequency. (col. 8, lines 49-50)

With regards to claims 9 and 21, Bose et al. (USPN 5,734,112) teaches the processor further comprises a calculation module configured for determining a density of the material from one of:

a calculation of the pressure, a pressure compensation factor, and one of the first frequency and the second frequency,(col. 3, lines19-21) and

a calculation of an average of the first frequency and the second frequency. (Col. 28, lines 17-18)

With regards to claims 10 and 22, Bose et al. (USPN 5,734,112) teaches a temperature sensor configured for detecting a temperature of the material conveyed through the conduit and for generating a temperature control signal for processing by the processor; (Col. 5, lines 60-63) and

a timing controller configured for synchronizing the processing of the temperature control signal with the determining of the density. (Col. 6, lines 1-5)

With regards to claims 11 and 23, Bose et al. (USPN 5,734,112) teaches a frequency sensor configured for detecting a phase difference in at least one of the first and the second frequencies, wherein the processor is further adapted to determine a mass flow rate of the material based on the phase difference. (Col. 1, lines 40-43)

With regards to claim 12, Bose et al. (USPN 5,734,112) teaches a method of measuring a property of a material (F) conveyed through a conduit, characterized in that the method comprises:

vibrating the conduit along a first cross-sectional axis (a); vibrating the conduit along a second cross-sectional axis (b); (col. 2 lines 64-67)

detecting a first resonant frequency along the first cross-sectional axis in response to vibrating the conduit at the first cross-sectional axis; detecting a second

resonant frequency at the second cross-sectional axis in response to vibrating the conduit along the second cross-sectional axis; (Col. 9,lines 18-21) and

determining a pressure of the material based on a ratio of the first resonant frequency and the second resonant frequency. (Col. 3,lines 10-13)

Allowable Subject Matter

The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 4-5 and 15-16:

Claims 4-5 and 15-16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The primary reason for the allowance of claims 4 and 15 is the inclusion of: the ratio is related to the pressure through first and second inertial moments according to an equation having a form of (first frequency)^2 / (second frequency)^2 = I_a /I_b , where I_a is the first inertial moment and I_b is the second inertial moment. It is this/these features found in the claim(s), as they are claimed in the combination that has not been found, taught or suggested by the prior art of record, which makes this/these claim(s) allowable over the prior art.

Claim 5 is allowed due to their dependency on claim 4.

Claim 16 is allowed due to their dependency on claim 15.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Normen (USPUB 2003/0055580) teaches determining properties of a flow tube and of a fluid flowing through a flow tube of a Coriolis flow meter, and Keilty et al. (USPN 6,636,815) teaches a majority component proportion determination of a fluid using a Coriolis flow meter.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aditya S. Bhat whose telephone number is 571-272-2270. The examiner can normally be reached on M-F 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Barlow can be reached on 571-272-2269. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Aditya Bhat
September 16, 2006

John Barlow
Supervisory Patent Examiner
Technology Center 2800